



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/554,716	09/18/2006	Peter Hader	JK/AK 0701 US-PAT	9517
96897	7590	06/10/2011	EXAMINER	
PATENT LAW OFFICES OF DR. NORMAN B. THOT			CIGNA, JACOB	
POSTFACH 10 17 56			ART UNIT	PAPER NUMBER
RATINGEN, 40837			3726	
GERMANY				

  

MAIL DATE	DELIVERY MODE
06/10/2011	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/554,716	HADER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	JACOB CIGNA	3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 18 April 2011.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-16 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ .  | 6) <input type="checkbox"/> Other: _____ .                        |

## DETAILED ACTION

### ***Claim Objections***

1. Claim 1 is objected to because of the following informalities: In line 3, claim 1 states “the roll sheet”. Examiner believes this should read, --the roll shell--. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schiel (US Patent 5,487,715 hereinafter referred to as '715) in view of Schiel (US Patent 5,800,324 hereinafter referred to as '324).

4. As to claim 1, '715 teaches a **roll (100)** for pressure treatment of material bands (the roll shown in Figure 1 is capable of treating material bands), **with a carrier (3) mounted in a rotationally fixed manner on a machine frame with a roll shell (4) mounted around the carrier (3)**, the roll sheet (4) being configured so as to rotate around the carrier (3) (the shell 2 is mounted so that it rotates around the central axis 1), **with at least one pressure chamber (12) between the carrier (3) and the roll shell (4)** (the pressure chamber 7 is located between the axis 1 and the shell 2), **which chamber is filled at least partly with a supporting liquid which can transmit a hydraulic supporting force from the carrier (3) to the roll shell (4)** (“liquid can be

moved into or out of half-annular pressure chamber 7" (Column 2 lines 17-18), **at least indirectly, wherein in the at least one pressure chamber (12) there is provided an elastic element (18")** (damping chamber 10 is an elastic element defined by rectangular tube 16) **which unrestrictedly communicates with the liquid** (as shown in Figure 1, the damping chamber 10 unrestrictedly communicates with the liquid). '715 does not teach that the damping chamber 10 is **constriction-free and is compressible when a liquid pressure required for producing the hydraulic supporting force is exceeded.** Instead, '715 teaches that the damping of damping chamber 10 is controlled by the constriction of the capillary elements. '324 of the same inventor teaches a roll having a vibration damper. '324 teaches "in the event of possible vibrations of the roll shell, the volume of the feed channel 28 which is filled with pressure fluid can change rapidly and unimpeded. In Figure 2, the volume of the feed channel 28 is limited by a piston 22 which is arranged in the transverse hole 29. A compression spring 21 urges this piston against the fluid pressure." (Column 5 lines 5-13). Thus, inventor Schiel has contemplated damping effects using liquid pressure mechanisms other than capillary action. Examiner further notes that the transverse hole 29 is constriction-free such that the diameter of the hole is the same all the way to the spring member 21. Thus, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have swapped the damping chambers 10 taught by '715 with a mechanism that is compressible when a liquid pressure required for producing the hydraulic supporting force is exceeded such as that taught by '324 because one would

have recognized the damping mechanisms to be known equivalents in the art and that both would have performed equally well to damp a roll.

5. As to claim 2, '715 in view of '324 teaches the roll as claimed in claim 1, wherein **the roll comprises at least one leakage chamber (13) for receiving supporting liquid leaving the pressure chamber (12)** ('715 teaches chamber 8 to be a "back-flow" chamber).

6. As to claim 3, '715 in view of '324 teaches the roll as claimed in claim 2, wherein **at least one elastic element (18) is provided in the at least one leakage chamber (13)** (as shown in Figure 1, there is at least one damping chamber 10 in the back-flow chamber 8).

7. As to claim 13, '715 in view of '324 teaches the roll as claimed in claim 1, wherein **the at least one elastic element (18, 18') is provided in a recess machined into the carrier (3)** (as shown in Figure 1 of '715, the damping chamber 10 defined by rectangular tube 16 is provided in a recess machined into the axis 1).

8. As to claim 14, KUSTERS teaches the roll as claimed in claim 13, wherein **the recess has the form of an axially parallel running longitudinal groove (14, 15, 16, 17)** (as shown in Figure 4, the damping chamber 10 runs nearly the entire longitudinal length of the cylinder and the core).

9. Claims 4, 5, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over '715 and '324 as applied to claim 1 above, and further in view of Kusters et al (US Patent 3,046,637 hereinafter referred to as KUSTERS).

10. As to claim 4, '715 in view of '324 teaches the roll as claimed in claim 1, but do not teach that **the at least one elastic element (18, 18") comprises a hollow chamber which is, or can be, provided with a compressible medium.** Instead, '715 teaches a hollow chamber 10 which is provided with a compressible medium which has been obviated to be replaced by the constriction free spring element of '324. Examiner provides KUSTERS which teaches a pressure treatment roll having an inner and an outer shell, the inner and outer shells damped by the elastic tubes 5 between the shells. The elastic tubes of KUSTERS are set to be constriction free in a pressure chamber between the inner and outer shells. Furthermore, it is taught that one is able to control the pressures inside the tubes with a compressible medium such as air, making the tubes 5 direct analogues to the damping chambers 10 of '715 and spring members of '324. therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have provided at least one elastic element comprises a hollow chamber which is, or can be, provided with a compressible medium such as taught by KUSTERS because one would have recognized that the tubes of KUSTERS would have provided each of manufacture over a spring or a capillary mechanism.

11. As to claim 5, '715 in view of '324 and KUSTERS teaches the roll as claimed in claim 4, wherein **the at least one elastic element (18, 18") is formed as a hose** (KUSTERS teaches the elastic element is a tube, a hose).

12. As to claim 11, '715 in view of '324 and KUSTERS teaches the roll as claimed in claim 5, wherein **the elastic elements (18, 18') formed as hoses comprise means**

**for internal support (20)** (KUSTERS teaches spherical hollow bodies 12 which serve to prevent distortion of the tube beyond desired limits (Column 2 lines 50+)).

13. Claims 6-10 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over '715 in view of '324 and KUSTERS as applied to claim 4 above, and further in view of Hornbostel (US Patent 3,098,284 hereinafter referred to as HORNBOSTEL).

14. As to claim 6, '715 in view of '324 and KUSTERS teaches the roll as claimed in claim 4, but does not teach **the compressible medium is air**. KUSTERS merely teaches that the compressible medium is a liquid or a gas. However, air is a well known gas which is useful for filling tubes in rollers subject to deflection in paper making processes. HORNBOSTEL teaches a roll which uses elastic tubes to control the crowning of the roll, the tubes being filled with air. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have provided the tubes of KUSTERS to be filled with air as taught by HORNBOSTEL because one would have recognized that air is a plentiful resource and has well known heating, compression, and other material properties to be controlled in a pressure compression system.

15. As to claim 7, '715 in view of '324 and KUSTERS and HORNBOSTEL teaches the roll as claimed in claim 6, wherein **the elastic element (18, 18') is closed and filled with a predetermined pressure** (KUSTERS teaches, "The tubes may each be closed at each end whereby if the pressure loading is effected through the journals of

the rotating core a pressure is then only produced in the tubes on the side in the part of the roller in the vicinity of the surfaces with which it co-acts" (Columns 1-2 lines 70-3).).

16. As to claim 8, '715 in view of '324 and KUSTERS and HORNBOSTEL teaches the roll as claimed in claim 7, wherein **the elastic element (18, 18") is subjected to air under atmospheric pressure** ("The pressure supplied to the tubes 5 may be varied according to the purposes for which the roller is required but usually a pressure of about one atmosphere is found to be satisfactory" (KUSTERS Column 2 lines 55+)).

17. As to claim 9, '715 in view of '324 and KUSTERS and HORNBOSTEL teaches the roll as claimed in claim 7, wherein **the elastic element (18, 18') comprises a one-way valve, by means of which it can be filled with air under a pressure that is lower than the pressure exerted on the hydraulic supporting liquid operation** (HORNBOSTEL teaches, "The fluid under pressure such as air under pressure may be fed from a suitable source S through a pressure control valve V-21" (Column 4 lines 37-39). Furthermore, HORNBOSTEL teaches an embodiment in which the elastic tubes are inflated to a pressure that is lower than pressure exerted upon them, creating the negative crown as shown in Figure 2).

18. As to claim 10, '715 in view of '324 and KUSTERS and HORNBOSTEL teaches the roll as claimed in claim 6, wherein **the at least one elastic element (18, 18') is connected to a compressed air source (26)** (HORNBOSTEL teaches that the "air under pressure may be fed from a suitable source S" (Column 4 lines 37-39).), **by means of which the pressure can be adjusted in such a way that it is always slightly higher than the pressure exerted on the hydraulic supporting liquid**

(Furthermore, HORNBOSTEL teaches an embodiment in which the elastic tubes are inflated to a pressure that is higher than pressure exerted upon them, creating the positive crown as shown in Figure 1).

19. As to claim 15, '715 in view of '324 and KUSTERS and HORNBOSTEL teaches the roll as claimed in claim 1, but does not teach **a means for determining the hydraulic pressure exerted on the supporting liquid are provided**. KUSTERS teaches that there is a "source of pressure" but does not go into detail regarding the source of pressure (Column 2 lines 41+). HORNBOSTEL teaches a similar roller using inflated tubes to effect pressures on a rotatable outer shell. The tubes are pressure controlled. HORNBOSTEL teaches that "air under pressure may be fed from a suitable source through a pressure control valve V-21" (Column 4 lines 37-39). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have provided the means for determining the hydraulic pressure exerted on the supporting liquid as taught by HORNBOSTEL in the roller of KUSTERS because one would have recognized that an easy way to control the pressure would have been to feed the fluid through a pressure control valve as taught by HORNBOSTEL.

20. As to claim 16, '715 in view of '324 and KUSTERS and HORNBOSTEL teaches the roll as claimed in claim 15, wherein **the roll is designed in such a way that the means for determining the hydraulic pressure serve for controlling or regulating a pneumatic pressure to which the at least one elastic element (18, 18') is subjected**

(HORNBOSTEL teaches a pressure control valve which is useful for controlling the pneumatic pressure to which the at least one elastic element is subjected).

21. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over '715 in view of '324 and KUSTERS and HORNBOSTEL as applied to claim 10 above, and further in view of Korsch (US Patent 3,470,948 hereinafter referred to as KORSCH).

22. As to claim 12, KUSTERS in view of HORNBOSTEL teaches the roll as claimed in claim 10, but does not teach **a means for internal support (20) comprise a spiral coil of an elastically deformable material.** However, KORSCH teaches a roller useful for rolling paper which uses hoses filled with a fluid to effect damped pressure. An embodiment of KORSCH is similar to HORNBOSTEL in that the tube is spiraled around a center core. Another embodiment is more similar to KUSTERS in that tubes are longitudinally arranged along the core as shown in Figure 6. KORSCH teaches regarding the embodiment of Figure 6, "It is of course, to be understood that, if desired, the pressure hoses may also be armed or reinforced by inserts of textile material, metallic threads, or glass fiber threads" (Column 3 lines 69-71). Thus, reinforcement of elastically deformable material is known in the art in tubes used for effecting pressures in rollers used in paper-making. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have provided the internal support comprising a spiral coil of an elastically deformable material as taught by KORSCH in the roller of KUSTERS in view of HORNBOSTEL because one would have recognized that as KUSTERS recognizes the need for reinforcement of the tubes,

that the reinforcement of KORSCH would have provided extra reinforcement against collapse or unwanted distortion.

### ***Response to Arguments***

23. Applicant's arguments, see pages 5-11, filed 18 April 2011, with respect to the rejection(s) of claim(s) 1-16 under KUSTERS, HORNBOSTEL and KORSCH have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of SCHIEL'715, SCHIEL'324, KUSTERS, HORNBOSTEL and KORSCH. Each of applicant's arguments are set forth below in italics, followed by Examiner's response.

24. The rejections of claims 1, 12, 15 and 16 under 35 USC 112 Paragraph 2 have been withdrawn.

25. *Because each of Kusters, Hornbostel and Korsch are missing at least the features of a roll for the pressure treatment of material bands with a carrier (3) mounted in a rotationally fixed manner on a machine frame and a roll shell (4) mounted around the carrier (3), the roll sheet (4) being configured so as to rotate around the carrier (3), as is recited in independent claim 1 of the present application, it is respectfully submitted that any combination of Kusters, Hornbostel and Korsch, to the extent proper, could not render obvious dependent claim 12.*

26. Examiner agrees that KUSTERS, HORNBOSTEL, and KORSCH do not teach the rotational limitations as newly claimed. However, Examiner has provided a new grounds of rejection. Examiner has laid open obviousness statements for combining the teachings of SCHIEL'715, SCHIEL'324 to obviate the independent claim. Examiner has

further provided KUSTERS, HORNBOSTEL, and KORSCH to obviate independent claims. Proper obviousness and motivational statements have been provided for combining each of the prior art references. Thus, Examiner asserts that the claim limitations of a carrier mounted in a rotationally fixed manner on a machine frame with a roll shell mounted around the carrier, the roll shell being configured so as to rotate around the carrier are obviated.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JACOB CIGNA whose telephone number is (571)270-

5262. The examiner can normally be reached on Monday - Friday 9:30am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bryant can be reached on (571) 272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DAVID P. BRYANT/  
Supervisory Patent Examiner, Art Unit 3726

/JACOB J CIGNA/  
Examiner, Art Unit 3726  
June 8, 2011